

WE CLAIM:

1. A host cell for expression and secretion of a heterologous polypeptide, wherein the cell is a Caulobacter comprising at least one surface layer transport
5 protein having an amino acid sequence homologous to SEQ ID NO:4 or SEQ ID NO:5, and wherein the host further comprises a DNA construct comprising DNA encoding a polypeptide heterologous to a surface layer protein of the cell 5' from and operably linked to DNA encoding a Caulobacter surface layer protein secretion signal, with the proviso that when the cell comprises transport proteins having the same
10 sequence as both SEQ ID NO:4 and SEQ ID NO:5, the secretion signal is not from C. crescentus.
2. The cell of claim 1 wherein at least one of the transport proteins of the cell has an amino acid sequence the same as SEQ ID NO:4 or SEQ ID NO:5.
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3. The cell of claim 2 having transport proteins with the same amino acid sequence as SEQ ID NO:4 and SEQ ID NO:5, and wherein the secretion signal does not comprise SEQ ID NO:1.
- 20 4. The cell of claim 1, ~~2 or 3~~ wherein the DNA construct further comprises an operably linked promoter recognized by the cell.
5. A method for identifying a Caulobacter suitable for use as a host cell for expression and secretion of a heterologous polypeptide comprising:
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- (a) extracting DNA from a candidate Caulobacter;
 - (b) contacting the DNA with an oligonucleotide capable of selective hybridization to a nucleotide sequence encoding SEQ ID NO:4 or SEQ ID NO:5; and
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 - (c) determining whether the oligonucleotide hybridizes to the DNA.

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6. The method of claim 5 wherein the oligonucleotide is labelled and said determining is by detection of the presence of the label bound to the DNA.
7. The method of claim 5 wherein said determining is by amplification of DNA
5 with the oligonucleotide as a primer, followed by detection of an amplification product.
8. A DNA construct comprising one or more restriction sites for facilitating insertion of DNA into the construct, wherein the construct further comprises DNA
10 encoding a Caulobacter surface layer protein secretion signal not present in C. crescentus.
9. A DNA construct comprising DNA encoding a polypeptide not present in Caulobacter surface layer protein 5' from and operatively linked to DNA encoding a
15 Caulobacter surface layer protein secretion signal not present in C. crescentus.
10. The DNA construct of claim 9 or ~~10~~ further comprising an operably linked promoter recognized by Caulobacter.
11. The DNA construct of claim 8, ~~9 or 10~~, wherein the secretion signal has an amino acid sequence which does not comprise SEQ ID NO:1.
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12. A bacterial cell comprising a DNA construct of claim 9, ~~10 or 11~~.
13. The cell of claim 12, wherein the cell is a Caulobacter.
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14. The cell of claim 12, wherein the cell is C. crescentus.
15. The cell of claim 13 or 14, wherein the DNA construct further comprises an
30 operably linked promoter recognized by Caulobacter and wherein the DNA construct is expressed in the cell and the protein so expressed is secreted by the cell.

16. A secreted protein obtained from a cell of claim 15, wherein the protein comprises one or more portions heterologous to a surface layer protein of the cell and wherein the protein has a C-terminal portion comprising a surface layer protein secretion signal not present in C. crescentus.

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add #4

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